The Newsweekly for the Computer Community

Supermarket?

New Computer School Chain Buys Fleet Of H-125s, Some Keytapes

FALLS CHURCH, VA. – A company that intends to be the "supermarket" of the computer education field has started acting appropriately – by going out and buying a whole fleet of computers!

Computer Learning Corp. placed an order with Honeywell EDP last week for 25 of the new Honeywell 110s – small scale systems in some ways, but able to run the standard Cobol and business software under an operating system. This hardware will be in addition to the IBM 360 hardware that Computer Learning has already ordered.

None of the hardware – either computers or Keytapes – has yet been delivered to any Honeywell customers, but COMPUTERWORLD was told by Computer Learning executives that they had made extensive evaluations of the systems prior to signing contracts worth about $3 million.

Largest Educational Order

The order is reportedly the largest single order from an educational institution that Honeywell has ever received. The systems will be completely installed by 1970, with five year leases.

The computers, along with 14 Keytape data preparation devices will be used to train students in keypunching, programming, systems design, engineering and management science, Computer Learning's president Thomas E. Stone said.

The first 110 will be delivered in August, Stone said, but on an interim basis, a slightly larger Model 120 will be installed in Falls Church and in a new office opening in Norfolk in July. Four are planned for the Washington area with others slated to go into offices in Boston and Atlanta later this year.

Keeping Professionals Posted

Computer Learning, organized last

December, plans to use the computers to help young adults pursue careers in data processing; to keep professionals posted on latest computer trends and developments; and, to teach executives practical computer applications for use in business, education and government.

"The new machines," Stone said, "will give students the hands-on training that's needed to round out some of our basic programs of instruction as well as to provide an essential tool for some of our more complex technical course offerings."

The first computer is being installed at the firm's Falls Church headquarters. That facility and others opening in key cities during the next two years, will be equipped with electronic labs, computer devices and training aids to teach students electromechanical operation of card readers, magnetic tape drives, high speed printers and other computer equipment.

CDI Plays Follow My Leader - Starts New Sales Course

Control Data Institute of Arlington, Virginia has said it will write a new course for sales marketing representatives interested in computer and EDP sales. The Institute said it would be the first time that such a course would be offered to men and women entering the computer sales

However, from the details given it looks remarkably like the course being given by Computer Learning, a new firm whose vice president, Sven Larsen, is the former CDI president (see CW, Feb. 14, p. 1).

The course, according to Charles Hifer, director of CDI's Arlington facility, is designed to help sales representatives find positions in computer systems sales, data processing center sales, and component sales. There is a great demand for marketing sales people in all these areas. The course includes such subjects as computer characteristics, basic computer applications, introduction to digital computers, and, not surprisingly, sales techniques.

AMA's Annual Conference

Management's Own EDP Meeting Readies

NEW YORK, N.Y. – Final touches are being made this week to the major management event of the year – the American Management Association's Annual EDP Conference. Over a thousand top level executives are expected to attend the meetings which are to be held in the Americana Hotel, starting March 4.

The prime attraction of the conference is its difference from standard technical meetings – which are basically hardware and software oriented – by being people and results oriented, and the computer is regarded not as an end in itself, but simply as a tool.

Specifically, the conference will deal with the computer's effect on management, management of computer projects at the operational level, and what management needs to know to get the best results from this new technology.

Effects On Management

The effect of computers on management will be examined from the standpoint of both upper and middle level management. The impact of computer based management information systems on both levels will be discussed by Terrance Hanold, president of the Pillsbury Company. Computers in operational management of a military organization will be explained by Marine Corps Commandant L. F. Chapman, Jr. Although the Marine Corps is a special type of organization, its response to computer systems may be closely analogous to the response of middle level management in a modern corporation.

Techniques Not Applicable

Problems of managing computer projects will be looked at in terms of design, selection, and administration. The design of electronic data processing systems, and the priorities of selecting programming projects, will be discussed by M. H. Schwartz, vice president of First National City Bank. The inapplicability of existing management techniques to computer programming projects will be considered by Charles P. Lecht, president of Advanced Computer Techniques Corp.

Practical Approach

The need to apply management sciences widely, and to integrate management science with newer disciplines, will also be examined. The need for a quantitative approach to management problems, through wide application of the management sciences, will be discussed by Dr. E. Leonard Arnoff, of Ernst & Ernst, Cleveland. Integration of management science with systems designing and computer programming will be discussed by Edward W. Hausburg, senior consultant at Mobil Oil.

A practical approach to multi-subscriber time sharing systems will be provided by a special AMA briefing scheduled to follow the conference. The briefing will concentrate on the potentials of direct access systems.

Our Community Has Its Scouts, Too

Members of a new Explorer Scout troop for computer sciences, formed recently by the General Electric Information Systems Sales and Service office, are introduced to GE computer equipment. Left to right are Dominic Mormile, GE computer operator; Paul Colaluca, manager of the GE data processing center; Vincent Vitollo and John Wroblesky, members of Troop 415. Calaluca is troop leader, and Mormile, assistant leader.

MOUNTAINSIDE, N.J. – An Explorer Scout troop meets here for two hours each month to study computer sciences. The boys of Troop 415, aged 14 to 17, are learning about computer operations, programming, and electronics. Just recently a computer merit badge was made available for Boy Scouts and Explorer Scouts who meet certain requirements.

The troop meetings are designed to provide high school students with a better understanding of both data processing and the free enterprise system. Attendance at the first meeting brought out three times the number of boys that could be accommodated, according to troop leader V. Paul Colaluca, manager of the local General Electric data processing center.

The new badge was originally proposed by the Data Processing Management Association, along with a set of requirements, a merit badge design, and material for a pamphlet. The proposed requirements were approved by the Air Force Technical Training Center, Sheppard AFB, Tex., the Professional Programmers Association, and IBM.

The badge is expected to furnish Boy Scouts and Explorer Scouts with a solid foundation in computer sciences while avoiding an overly technical approach. Badge requirements are designed to challenge curiosity and to furnish fundamentals on which to build a hobby or career.

Following are some sample Scout test questions: "Describe the differences and uses of analog and digital computers"; "Explain the Hollerith and Powers codes and their role in computers"; Obtain your local post office zip code and convert to binary."

Two Scanning Stocks Differ

Recognition Equipment stock moved up almost 14% this week in a market that saw little movement by most other stocks. Losers about equaled gainers in number.

Biggest loser of the week was Optical Scanning, whose holdings value plunged 8%.

During 1967 the issues of these two OCR companies moved up at almost identical paces. RE was up 233%, and OS increased some 233%.

Since the first of the year, however, values of these stocks have followed opposite paths. RE is up 8%, and OS is down 18%.

Other financial data appears on page 9.

Banks Back Leasco For $80M More

GREAT NECK, N.Y. – Leasco Data Processing Equipment Corp. has arranged an $80 million revolving line of credit with the Continental Illinois Bank and Trust Co. of Chicago as agent for a group of 32 banks. The agreement increases Leasco's bank lines to $131.5 million, according to company president Saul P. Steinberg. About half of the 50 largest banks in the country are participating in the line of credit that Leasco will use for the purchase of computers.

Leasco already has more than $100 million of third generation equipment on lease. The company also recently announced a $15 million loan agreement with five European banks to finance the operations of

the firm's computer leasing subsidiary, Leasco Europa Ltd.

In addition to Continental Illinois, banks taking part in the arrangement include: Bankers Trust Co., Chase Manhattan, Manufacturers Hanover Trust, Crocker-Citizens, United California, Wells Fargo, Girard Trust, Union Bank of Calif., Cleveland Trust, First National Bank of St. Paul. Also, Mercantile National Bank of Dallas, United States National Bank of Oregon, National Bank of North America, Bank of the Commonwealth, Bank of Nevada, First National Bank of Atlanta, Bank of New York, Detroit Bank and Trust Co., First National Bank of Boston, First National Bank of Jersey City. Also, First

National Bank of Nevada, First Wisconsin National Bank of Milwaukee, North Carolina National Bank, The Provident Bank (Cincinnati), Western Pennsylvania, Bank Leumi Le-Israel, Central National Bank in Chicago, First National Bank and Trust Co. of Tulsa, Long Island Trust Co., Pioneer Trust and Savings Bank, and National Boulevard Bank of Chicago.

According to the terms of the agreement, the revolving loan period will expire in about 12 months, at which time it matures into a five year term loan.

Leasco reported a 200% earnings rise over a year ago for the first quarter ended December 31, 1967.

Editorials

EDP & Management

There are two items in this week's paper of direct interest to management. The main one, of course, is the AMA EDP Conference. In past years this has been a worthwhile annual event, which, while not omitting technical interests, has placed primary emphasis on management. One of last year's most interesting points was made by Donald Pine of A.O. Smith Corp. In talking of conversions he said "Everything seemingly complex went well, everything seemingly simple was horribly complex." This was the style of factual conference information that allows managers to plan their operations.

But in the article on this page we are considering another point of EDP management. The whole question of responsibilities being taken by user management in purchasing computers. There is no question that this responsibility has grown enormously since the early days, and yet management, as a whole, is not fully aware of the implications involved.

COMPUTERWORLD believes that non-technical management has a major role to play in the affairs of the computer community. We feel that they have not done enough in the past and hope that they will be considerably more active in the future.

Be Prepared

Nothing helps a community more than its youngsters. We welcome the special EDP Boy Scout troops preparing themselves for the computer world and their professional badges.

Although excercises such as moving zip codes into binary may not be the ultimate in sophisticated education, they will certainly do for a start. If nothing else, the Scouts have an excellent motto for all of us. What profession needs to be prepared more (and for almost anything) than EDP?

First Of Four Parts

Management's Responsibilty Is For More Than Just The Hardware

By Alan Taylor

When management is sold a computer system and buys a set of computer hardware there is a large difference between what it hopes to get and what the vendor is contractually bound to supply. The size of this difference – a measure of the responsibility that the user is taking upon himself – is largely unrealized, and is becoming greater and greater every year.

What management is sold on, of course, is the system described in the proposal, or in the manufacturer's literature. This hardly mentions the inside of the computer, but makes great play about the software that comes with it, about the support the manufacturer will supply "free of additional charge," etc. There will be long lists showing the volume of activity that can be expected, timing charts that show just how long the computer system will take to handle the work, an appendix that shows the cost of the proposed system, etc.

The Law And Computers

But, when management has signed on the dotted line, *none of these manufacturer-supplied "facts" on*

> One of the rare times when contracts in the EDP field will be discussed is during the AMA Conference. Robert P. Bigelow will talk on "Legal Protection of Proprietary Software."

which he has relied are made part of the contract. The accuracy, or lack of it; the completeness, or lack of it; and hidden implications all become part of the *user* responsibility. User management may have no possible way of knowing what the facts are, even if the manufacturer has supplied him with quite specific figures.

What this means, of course, varies from case to case. In some cases it may be trivial, in others it may so affect the fortunes of the corporation that senior management may find themselves involved in stockholder suits for negligence. Normally it will lie somewhere in between.

User Responsibility

In the past decade, while tens of thousands of computers have been installed, not more than a handful of legal cases have even been started, and these have been settled out of

court. The meanings of computer contracts have not yet been properly established in the courts – even the possible problems have been practically ignored by the legal profession, *although the lives of many corporations now depend upon the proper functioning of computer hardware and software systems.*

Within the great corporations, however, lawyers have not completely ignored the problems. How to prepare a proposal is a subject in which salesmen are trained, and this certainly gets legal attention. As a result a user must read a proposal very carefully if he is not to be misled.

Not Part Of The Contract

For instance, one part of the proposal that management rarely looks at is the chapter listing just what courses the computer operators and other personnel should attend.

Yet, here may well be some very key points defining the user management's role!

Surprising, but true!

Details of this, and other "cosmetic" devices that the user should be on the watch for will be included in next week's article – "Where Do They Hide The Body?"

Letters to the Editor

When Is a Broker a Broker?

To the Editor:

Your mention of our company and its service concept (See CW, Feb. 7, p. 3) contains two statements that are substantially at variance with the marketing and technical support that we offer in the area of package programs.

First, we do not describe ourselves as "brokers" and discourage others from so describing our operations. The term is inappropriate since our company makes a significant "value added" contribution to all the software packages accepted for inclusion in our portfolio. Typically, we make investments in these packages in amounts considerably beyond what would be forthcoming from a broker operating on a commission basis. Our value added contribution lies in four areas: Critical evaluation of each package from the standpoint of technical adequacy and marketability; Preparation of sales aids and other promotional aids, as well as standardized technical documentation; Presentation of the package to prospective customers by trained salesmen in the field; and Installation support by our technical staff to assure the purchaser of an error-free operational system. Anyone who has been responsible for the marketing of computer products – whether hardware or software – can appreciate the significance of services of this scope to the purchasers of packaged software.

Second, your statement attributed to me, that support of our packages "is given by the program originator and that (Software Resources) does not intend to get involved in this type of operation" reflects a basic misunderstanding. In our activities, we make a distinction between the installation support needed to get a customer fully operational with a package and support in the form of extensions of modifications to that package. Software Resources Corpor-

ation stands behind each package it is marketing and offers on-site installation assistance by trained professionals for each and every package. In addition, we provide assurance that all bugs and errors in the package will be eliminated by Software Resources at no charge to the purchaser. What we do *not* do is to provide extensive contract programming in modification and adaptation in our packages to suit special customer requirements.

Since there appears to be considerable interest in the marketing of software packages at present, and considerable difference in the quality and level of support offered, I would appreciate your setting the record straight.

Robert V. Head
President
Software Resources
Los Angeles, California

In COMPUTERWORLD's original article, Software Resources' position was contrasted with the announced intentions of a new firm – Atlantic Software. Atlantic Software's reported intention was to provide in-house technical support on a continuing basis for software packages it hopes to market – very different from Software Resources' intention to "assure" such support. COMPUTERWORLD feels that users need to know the technical strength and facilities behind such assurances, and this is why we reported Mr Head's statement as news. He said that such support is to be provided by the originators of the package, and not by Software Resources itself.

The four "value-added" services mentioned by Head still appear to be marketing oriented, but frankly COMPUTERWORLD does not feel that they take Software Resources out of the perfectly honorable ranks of software brokers. Ed.

Words and Spellings

To the Editor:

You certainly run a quality publication to be so concerned with having properly defined terms before you publish a notice. (See CW, Feb. 21, p. 2.) This presents an obvious difficulty which is clearly apparent to you as well. One of the prime purposes of the National Symposium on Modular Programming is, in fact, to define terms. However, the following excerpt may prove suitable for purposes of informing your readers just what the intent of our Symposium is to be.

"To speak of modularity in programs or of modular programming is merely to identify that programs today are not simply monolithic linear sequences of machine instructions, but are also properly thought of as interconnected structures of larger aggregates of these instructions. We create programs today, not so much simply by writing down a series of instructions or higher level language statements, but by defining a system of modules – subroutines, macros, programs or other programming units – which realize the function the system is to perform. A growing faction of practitioners in the field now feel that program modularity is a key issue in the design of programs. Modular programming is neither trivial nor understood; and it is certainly not a dead issue. Organizations who have taken modularity as a simple concept and modular programming as merely dividing a problem up into more and smaller units have learned the difficult and expensive way that more understanding is required.

"It is the purpose of the National Symposium on Modular Programming to pull together the diverse knowledge and experience that may exist in isolated organizations within the computing professions about effective modular programming. Besides establishing a vocabulary and a framework

All Areas

Many Developments In New Disc-Pack Supply Area Noted In Week

The news from the disk pack supply field last week covered a number of different types of operations. The ex-president of Mac Panel, Mr. George Athanas, confirmed that he intends to set up his own firm to make disk packs. Details of this new enterprise in the manufacturing area were not available, but one of the problems he will encounter is that of distributing the packs. Recently, distribution problems have caused a number of manufacturers to make agreements with various firms who were not in the disk pack field, but who were in contact with computer users.

Caelus Memories and Memorex are known to have made such agreements, and this week Consolidated Electrodynamics announced that they too will act as distributors. Distributors presently differ about such points as exactly how much is to be charged, what length leases they can provide, if any, and how long it takes to get delivery. In the case of Con-solidated Electrodynamics, COMPUTERWORLD was told that at present no leasing arrangements are available, the price is being held at the standard $490, and delivery is anticipated to be immediately available through their various sales offices. As with all other manufacturers outside IBM itself, only 2311/1311 packs are available.

In the making was the possibility of yet another emerging distributor.

This time, the names of both the distributor and the manufacturer of the disk packs are known – the distributor being Wright Line and the manufacturer, Honeywell. The Honeywell decision to go the distributor route is interesting because they already have nationwide sales offices, the lack of which has forced others to work through distributors. However, these sales offices are primarily manned by computer salesmen and, as Mike Angiers told COMPUTERWORLD, "A computer salesman is much less productive than a salesman who is dedicated to selling supplies." The Wright Line sales force of some 110 people will not be the largest sales force in the industry – that distinction probably belongs to the Kee Lox force, who is distributing the Memorex packs – but will be considerably larger than that of the Honeywell EDP Special Products Division.

First Big Mitre Spin-Off Promises New Style Systems

BURLINGTON, MASS. – Over a dozen key scientists from the Mitre Corporation, which developed distributed processing projects for the Air Force, have organized a new company to introduce commercial utilization of distributed data processing systems and equipment. The company is Viatron Computer Systems Corporation, and its progress will be worth watching.

President and chairman of the board of Viatron is Dr. Edward M. Bennett, formerly head of the Information Sciences Department at Mitre. Twelve of his Mitre associates have joined with him to form Viatron, the first major "splinter group" from Mitre. The group expects that the equipment, services, and systems Viatron will provide will be a significant alternative to time sharing systems.

Distributed Processing Cuts Costs

Distributed processing was developed to save time and cut costs in time sharing systems. Air Force tests showed that about half of time sharing users' requests were relatively simple, and the information required could be provided by equipment much simpler than a sophisticated central computer. To handle the trivial and routine requests, the Air Force developed hardware to be used at the remote locations, saving the central computer for complex functions.

The Mitre scientists who formed Viatron think that the concept of having a limited amount of data processing equipment at the remote sites will be as economical for commercial users as it is for the Air Force. The equipment at remote stations will permit the use of a smaller, less expensive central computer, and users will not have to waste time waiting for the central computer to process simple requests.

Viatron intends to develop a line of distributed processing products, including distributed data systems and a line of peripherals they claim will be compatible with virtually all present computer systems.

US Navy Says That Operating Systems Standard Needed

The Navy recently expressed support for a move to explore the possibilities of standardizing input languages to operating systems. Norman J. Ream, special assistant to the Secretary of the Navy said: "The Navy urges that the United States of America Standards Institute (USASI) consider a program looking to the ultimate standardization of input language to operating systems." His statement came in response to a call for opinions on the proposed project.

"The Navy is concerned with the current proliferation of incompatible implementations of operating systems languages and will actively participate in any future USASI standardization efforts in this area," Ream said.

Ream is a well known EDP expert.

The crux of the problem is whether a standard operating systems input language is needed, according to Millard H. Perstein of Systems Development Corp. Perstein is gathering opinions on the problem for presentation to USASI's group on programming language specifications.

If Perstein finds that a large number of governmental, commercial, academic, and professional people agree that standardization is necessary, activity on standardizing top level control languages can begin. Perstein added that incremental standardization is both feasible and urgently needed.

Anyone having opinions on this standardization problem should contact Perstein at Systems Development Corp., 2500 Colorado Ave., Santa Monica, Calif. 90406.

Univac, SDS, CDC etc.

Many Assemblers To Be Charted With New Autoflow Facilities

PRINCETON, N.J. – The IBM /360 Autoflow system, an automatic flow-charter, has been extended to accept eight non-IBM assembly languages, as well as various 360 languages. The new languages include Sleuth (Univac 1107, 1108); Symbol and Meta-Symbol (Scientific Data System 910, 920, 930); Compass (Control Data 3200, 3300, 3400, 3600); DAP II (Computer Control 24, 124, 224); and Art (Univac 418).

Exact availability dates for each version will be announced soon, according to Richard Jones, president of Applied Data Research, marketers of the Autoflow packet. This extension is a major change and will be handled on a service bureau basis for the user who does not have an IBM /360.

The Autoflow system has also been extended to accept Honeywell's Cobol and Easycoder languages on the H-200 series. This change is important because of the number of H-200 systems in existence, but not too surprising as the H-200 series is quite similar to the Autoflow 1400 series. Autoflow is available to H-200 users on a lease or service bureau basis.

Autoflow produces high quality two-dimensional flow-charts. All statement analysis, page allocation, line drawing, and rearrangement of program flow is performed automatically. Previously, it could be leased only for 360, 709, and 1400 IBM Systems, and RCA Spectra 70s.

100% Conversion Of 1400 To 360 Claimed

BALTIMORE, MD. – A firm here claims that programs written for the IBM 1401 or 1460, can now be converted automatically into system 360 programs, written in 360 assembly language. It is thus possible for 1401/1460 written programs to take full advantage of the 360's features. The converting is done by a computer program just developed by Convert-a-Code, a local firm.

When the new program is assembled, it is entirely compatible with the program converted. The 1401/1460 input and output are still the same, but the new program works with the 360 operating system. This means that 1401/1460 programs can operate in a multiprogramming or time sharing environment. The operation is done at the speed of the 360 system, without use of emulators or simulators. The new program works entirely within the 360 environment.

The cost in time and money is said to be only a fraction of the cost of any alternative method, according to Frank J. Ahern, manager of marketing services. The new program avoids rental cost of the 1401, or rental of the compatibility features on a system 360, he said. There is no manual conversion on the user's part under the new method.

The new program is guaranteed to be 100 percent effective. It is designed to take 1401/1460 object program decks into the user's computer run and, by analysis and interpretive routine, to convert the object decks into system 360 assembly range. The actual conversion is done by Convert-a-Code's analysts, who check the conversion listing for unusual programs which require manual conversion before sending them back to the user for running. Errors discovered during running on the 360 will require the 1401 decks to be returned to Convert-a-Code for reconversion. In the event that some minor base malfunctions, Convert-a-Code says it will take it back and do it over. If it runs off the system, which is said to be very unlikely, the firm's program analysts will do the converting by hand.

Viet-Vet Is CDI 'Ghetto' Scholar

WALTHAM, MASS. – A Marine sergeant, Roy Wilson, who served in Viet Nam is one of two Boston area Negroes who received scholarships for a 500 hour course in computer programming technology. The other scholarship recipient is Ronald S. Johnson. They will study history, principles, and techniques of modern digital computer programming. The course is given by Control Data Institute, who awarded the scholarships.

Other scholarships to schools in the Boston and Washington, D.C. areas have been given by CDI before. This time, the specific objective was to make awards to two qualified Negroes and to train them for positions on the programming staffs of business, scientific, or government computer installations.

Operation of the Control Data 3600 computer is explained by P.C. Smith (left), director of CDI, to scholarship winners Roy E. Wilson (seated) and Ronald S. Johnson.

RCA Drops EDP Name - Now "Info Systems"

NEW YORK, N.Y. – The Electronic Data Processing operation of RCA has been renamed the RCA Information Systems Division. The new name was selected to better describe the present and future activities of the division and to complement RCA's corporate-wide modernization program, according to James R. Bradburn, executive vice president, Information Systems.

Total Systems

"The term electronic data processing normally is associated with the batch or bulk processing capabilities of computers," Bradburn said. "Information systems is more encompassing and reflects RCA's capabilities in computerized communications, time sharing, management information systems, on line information retrieval, computerized printing and typesetting, emulation, and software systems.

"In growing numbers, our customers have been ordering systems that handle tasks much more sophisticated than simple batch processing. In 1967, about 70% of systems booked by RCA were for communications-oriented computer systems. In addition, video display terminals and other peripheral devices accounted for more than 50% of the dollar value of these systems."

New Look for RCA

Last month, Robert W. Sarnoff, RCA president and chief executive officer, outlined a corporate identification program for RCA, modernizing every facet of its appearance from trademark to office design, and reflecting the company's growth and diversification. Several divisions were renamed at that time.

1901A DETAILS

The description of the ICT 1901A, promised for this week, has been unavoidably held over till next week owing to lack of space.

=EDPeople=
EDPer Is 1st Woman VP At S&P

Penelope Kaniclides has been elected vice president-computer services of *Standard & Poor's Corp.* The first woman vice president in the history of the 108-year-old investment advisory firm, Miss Kaniclides is responsible for all computer operations including programming and analysis, machine requirements, acquisitions and operations.

Raymond J. Thayer has been appointed manager, headquarters systems and data processing at *Rockwell Manufacturing Co.,* Pittsburgh. He joined Rockwell in 1966, and most recently has held the position of manager, data processing department.

R.J. Thayer

William A. Lape has been appointed to the newly created position of senior manager of systems planning for the *H. J. Heinz Co.* Prior to the appointment, Lape served as assistant to the vice president and controller. He joined Heinz in 1963 as an administrative research analyst.

W.A. Lape.

Systems Development Corp. has named John F. Matousek vice president and general manager of its Commercial Systems Division and Dr. Thomas C. Rowan as vice president-marketing and program development.

Gerald D. Kambestad has been appointed manager of the Information Systems Dept. in the southwest operations of *Computer Sciences Corp.*

Joseph C. Vierra has been promoted to vice president of *Computer Usage Development Corp.,* a subsidiary of Computer Usage Co. Vierra joined CUC in 1962 as a marketing representative.

J.C. Vierra

Wesly J. Rishel has been appointed to the staff of the Research and Development Division at *Com-Share. Inc.* Initially, he will be responsible for the Basic compiler.

NOW! On-line disk file.
Full COBOL.
Modest cost.

Announcing the B 500, by Burroughs.

A special, compact Systems Memory lets Burroughs new B 500 computer offer you full COBOL programing plus all the advantages of high speed disk file processing at an attractive price. The new B 500 is available in magnetic tape, disk file, and data communications configurations. It comes with cost-conscious peripherals that include a new printer and Burroughs unique magnetic tape "clusters." The B 500 also comes with excellent

credentials. It's a new system based on Burroughs highly successful B100, B200 and B300's, and it makes use of all their field-proven systems software and applicational programs.

If you're concerned with getting a lot of work done . . . if you need a machine that can handle on-line data communications and regular production work at the same time . . . if you'd like to take advantage of COBOL programing, operating

system control, or multiprograming . . . if the prospect of almost unlimited high speed disk file memory appeals to you . . . and if you'd like to have all this at a very modest investment . . . then you should meet the new Burroughs B 500.

Your local Burroughs representative will be happy to introduce you. Burroughs Corporation, Detroit, Michigan 48232.

Burroughs Ⓑ

Scientific Trend
Details Of New Univac Services Library Shown

PHILADELPHIA, PA. – Details on four programs in the application library of Univac Information Services Division have been made available.

Structural Analysis

Stress is a general purpose tool for the computer analysis of frame structures such as truss bridges, building frameworks, and transmission line towers. Stress consists of a language for describing structural analysis problems, and a program for solving those problems. In effect, Stress writes structural equations for the engineer, then solves them.

Electronic Circuits

APT (Automatically Programmed Tools) produces programs for Numerical Control Applications. In a production oriented language, metalworking personnel describe the geometry of a metal part. The computer then calculates motions the machine tool must follow to produce the desired part. APT III also tailors generalized data produced to run a given combination of control system and machine tool.

Gocap (Graphical Output Circuit Analysis Program) produces analyses of electronic circuits. The structure, components, and parameters of the circuit and specific analyses to be performed are identified in an engineering language. Then, in effect, the computer writes equations of the circuit and solves them, producing the graphical output requested by the circuit designer.

Omega/LP is an integrated linear programming system with processing features useful in determination of optimum blending and distribution functions. Such functions are used in chemical plants, oil refineries, feed mills, and warehouses. Data manipulation capability is also available through Omega/LP.

These are the only programs in the Univac ISD library on which specific information is currently available.

NY Firm Offers 3 Mixed Seminars During May

NEW YORK, N.Y. – How to get the most from computers will be the theme of three seminars to be held by the Special Studies Institute at the Harvard Club here.

New maintenance and computer management techniques will be studied in the first seminar. Uses of computers in developing a preventive maintenance program, in planning maintenance operations, and in controlling maintenance budgets will be examined, May 9 - 10.

Implementation of on line, real time systems will be studied in the second seminar. How is an on line system implemented? What are the applications of on line, real time management information systems? An attempt will be made to answer these questions, May 13 - 14.

Uses of computers in personnel management will be studied in the third seminar. Application of computer capabilities to personnel management will be illustrated with demonstrations, simulations, and analyses of specific personnel problems, May 23 - 24.

How to choose between the two great disc packs.

Both of these disc packs are great.
The following checklist will help you
figure which is greater.*

	Memorex Mark I Disc Pack	The Other Disc Pack		Memorex Mark I Disc Pack	The Other Disc Pack
Is it compatible and interchangeable?	Yes	Yes	Is color coding available?	Yes	No
Are *all* packs shipped surface analyzed error-free?	Yes	No	Is a carrying case offered?	Yes	No
Will the cover support combustion?	No	Yes	What about two week delivery?	Yes	No
Is its cover unconditionally guaranteed for breakage?	Yes	No	Is a leasing plan available?	Yes	Yes
Does it come with bezel labels?	Yes	No	What about purchase option credit?	75%	55%
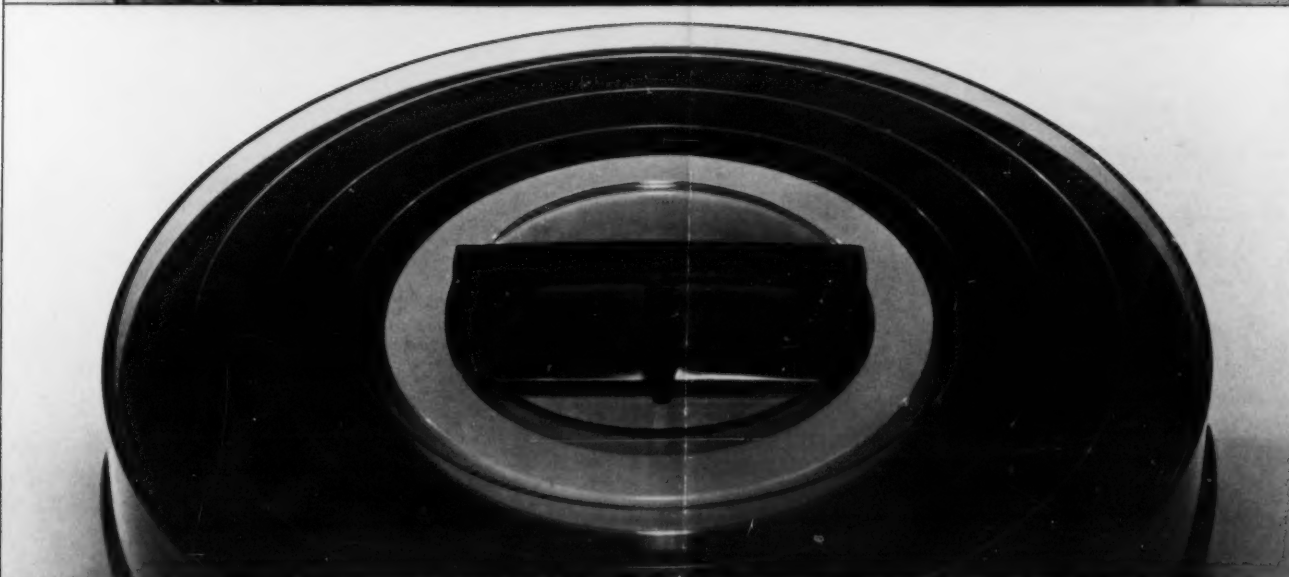
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Like Some Help?
ESP, PACFAC Debut

LOS ANGELES, CALIF. — Two new software packages were announced by Software Resources Corp. last week. They are ESP, a comprehensive system for the evaluation, selection, and application of forecasting techniques; and PACFAC, a disk pack analysis and control program for the IBM/360.

ESP provides, in a unified package, a means of selecting the most suitable forecasting technique from the many powerful methods developed in recent years.

Written in Fortran IV for the IBM 7090 and 360 computers, ESP provides a systematic means of evaluating the accuracy of present methods, selecting the best techniques for a given problem, and preparing the actual

forecast. Output is available in both tabular reports and prepared graphs. ESP sells for $9000, with delivery in 30 days.

The new PACFAC program interrogates the volume table of contents of any IBM disk pack to determine which files are present, their activity status, organization, size, and location, as well as the size and location of available free space. It also provides a permanent history of inoperative tracks. In addition to saving time by replacing manual methods of analyzing file space, PACFAC can reduce disk pack inventory costs by providing improved documentation and control of file storage, according to Software Resources.

PACFAC sells for $250.

Bryant Opens Up Sales Office In California — CSC Adds New HQ

WALLED LAKE, MICH. — *Bryant Computer Products* has opened a new northwestern sales office at 1310 Bayshore Highway, Burlingame, Calif. Gary Schmidt has joined Bryant as sales engineer for the northwestern sales territory.

STONEHAM, MASS. — *Dynamics Research Corp.* will construct a new 32,000 square foot facility to enable its systems department to continue expansion in systems integration, systems management, and manufacture of digital systems. Approximately 100 employees and the company's Computing Center will move to the new building on Interstate Route 93. The building is scheduled for occupancy in June. An unusual feature will be a specially designed section

Expansions

for testing inertial equipment. A five-foot thick concrete slab and other elements will achieve the vibration-isolated foundation necessary for inertial systems testing.

LOS ANGELES, CALIF. — *Computer Sciences Corp.* has moved its corporate offices to Century City in Los Angeles, from El Segundo, Calif. The company's Computer Sciences Division will continue to maintain its headquarters in El Segundo. The new corporate offices occupy 10,000 square feet at 1901 Avenue of the Stars in Century City, a 180-acre "city within a city."

Michigan Bank Buys Three B-3500s

Michigan National Bank and *Michigan Bank N.A.* have ordered three *Burroughs* B3500 systems valued at $2 million. Having compatible computer systems, the two financial institutions will be able to provide backup for each other and to cooperate in programming and systems development.

Wyle Laboratories has completed negotiations with *NASA's Langley Research Center* for a cost-plus-award-fee contract for over $1 million. The

Orders and Installations

contract, which covers repair, maintenance, and calibration of research instruments, will run for a year, with options to renew for two additional one year periods. The total procurement is valued at over $3 million.

Information Displays, Inc., Mount Kisco, N.Y., has received a contract for $108,000 from the *AAI Corp.* of Cockeysville, Md. for a Computer Controlled Display System to serve as part of a Maneuvering Tactics Training Device the AAI Corp. is developing for the Naval Training Device Center.

The *Royal Netherlands Blast Furnace and Steel Works* has installed a Dual *Control Data* 3300 computer system. The company, better known in Europe as Hoogovens, now relies on Control Data computers for about 40% of its daily production planning and control procedures.

GAI-GMX, a division of EGG International Inc., has ordered an *SDS* Sigma 5 computer valued at $500,000. The computer will be used to assist GAI-GMX customers in locating oil and mineral deposits. It will process data generated by advanced shipborne, airborne, and surface geophysical survey instrumentation.

$ $ FINANCIAL MATTERS $ $

Software and Service

CLIFTON, N.J. – *Automatic Data Processing, Inc.* reported record sales and earnings for the six months ended December 31. Net dollar earnings rose to $644,283 or $.44 a share from $414,149 or an adjusted $.31 a share for the same period the previous year. Sales were $6,785,252, compared to $4,686,293. Included in results for both periods are sales and earnings of four acquisitions made this year: *Analytic Computing Services, Inc.*, New York; *Computer Services of Florida, Inc.*, Miami; *Computab Associates, Inc.*, Philadelphia; and *Research Calculations, Inc.*, Newton, Mass.

The company also announced agreement in principle for ADP to acquire *Systems Management Corp.*, Baltimore.

Peripherals

DALLAS, TEXAS – *University Computing Co.* and *Gulf Insurance Co.* have reached agreement in principle by which University would issue 350,000 shares of its common stock to purchase 700,000 shares of the common stock of Gulf. The agreement is subject to the approval of the stockholders of Gulf at their regular annual meeting on March 8. The market values of the common stocks of University and Gulf on January 24 were approximately $86 and $34, respectively.

Leasing

CHICAGO, ILL. – *Dearborn Computer Corp.*, lessor of IBM System/360 computers, reported revenues from equipment rentals of $665,000 for the three months ended January 31. Net income amounted to $101,000, or $.14 a share based on 725,000 shares outstanding. DCC had $16,000,000 of data processing equipment on lease at January 31, the close of the first quarter of the current fiscal year.

The initial public offering of the company's common stock was made last December. The shares are traded over-the-counter.

CHICAGO, ILL. – *Datronic Rental Corp.* reported revenues of $473,067 for the six months period ended December 31, a 303% increase over revenues of $156,364 in the corresponding period the previous year. Net earnings increased 253% from $25,839 or $.03 per share to $64,357 or $.07.

Others

MT. KISCO, N.Y. – *Computer Usage Co.* reported record earnings for the first quarter ended December 31. Income from services amounted to $3,555,867 as compared with $2,929,111 for the first quarter of the previous year. Net income was $199,724 or $.28 per share as compared with $143,452 or $.20 per share.

NEW YORK, N.Y. – *Brandon Applied Systems, Inc.* and *Ehlers, Maremount & Co., Inc.* announced agreement in principle whereby Brandon would acquire 100% of Ehlers, Maremount.

Letters to the Editor

ithin which to speak of modularity and modular programming, it is hoped the Symposium will make significant contributions to the understanding of a number adjacent areas and related problems: How do we divide up a problem into workable segments modules? How is the independence and integrity of program modules maintained? What are the limits to which modular approaches can be taken without actually increasing the difficulty and complexity of the programming problem?"

As you can see, these are key problems which face many a programmer, systems analyst, and programming manager

We trust this at least in part answers your question. I look forward to being of any further assistance to you, and will keep you posted on any further developments as the Symposium approaches.

Larry L. Constantine
President
Information & Systems Institute, Inc.
Cambridge, Massachusetts

The Symposium will be in Boston July 23 and 24. Ed.

Computer Stocks: Trading Summary

Week Ending February 23, 1968

NEW YORK STOCK EXCHANGE	1967 High	Low	Week High	Low	Last	Week Net Change	Week %Change
Addressograph-Multigraph	80 1/2	46 7/8	65 1/2	62 1/2	64	+ 1 5/8	+ 2.60
American Research	195	37 3/4	145 1/2	137	137 1/4	- 1/8	- 0.09
Ampex Corp.	40 3/4	22 3/4	31 1/8	29 7/8	30 3/8	+ 5/8	+ 2.10
Burroughs	198 5/8	80 7/8	187 3/8	177 1/2	183 1/4	+ 5 3/4	+ 3.24
Collins Radio	114 7/8	53	73 3/4	69 1/4	71	+ 1	+ 1.44
Control Data	165 5/8	33 1/2	124 1/4	115	118 3/4	+ 1/2	+ 0.42
Electronic Associates	30 1/4	16 3/4	24 1/2	22 1/8	22 1/8	- 3/8	- 1.67
General Electric	115 7/8	82 1/2	89 3/4	86 1/2	88	+ 1/4	+ 0.28
Honeywell	117 7/8	63 1/2	100	93 3/4	98	+ 3 1/4	+ 3.43
IBM	648	162 1/2	600	577	589 3/4	+12 3/4	+ 2.21
Litton	120 3/8	67 1/8	71 1/4	68	68 3/4	- 1/4	- 0.36
Nat Cash Register	136 5/8	67 1/8	115 1/4	106	112 1/2	+ 6	+ 5.63
RCA	65 1/2	42 5/8	48 5/8	48 1/4	48 5/8	. . . .	. . . .
Raytheon	117	49	86 3/8	82 3/8	83 1/4	+ 1 3/8	+ 1.65
Sanders	77 1/4	37 5/8	52 5/8	47 1/2	48 1/4	- 1 5/8	- 3.24
Scientific Data	152 3/4	70 3/8	137 5/8	127	127 1/2	- 1/2	- 0.39
SCI	82 1/4	43 1/2	46 3/4	44 7/8	45 1/4	- 1	- 2.16
Sperry Rand	65 1/8	28 1/8	50 1/2	48	48 5/8	+ 3/8	+ 0.78
NYSE COMPUTER STOCK AVERAGE						+ 1.65	+ 0.88

AMERICAN STOCK EXCHANGE	1967 High	Low	Week High	Low	Last	Week Net Change	Week %Change
Audio Devices, Inc.	33 1/8	20	29 5/8	26 3/4	29	+ 1 7/8	+ 6.91
Automatic Data Processing	68 1/2	41 1/2	52 1/2	50 3/4	52 1/2	+ 2 1/2	+ 5.00
Bunker Ramo	21 7/8	7 1/2	15	14	14 1/4	+ 1/8	+ 0.88
Calcomp	46 3/4	32 1/8	36 3/4	34 1/8	34 3/8	- 1/8	- 0.36
Computer Applications	47 3/8	14	26 7/8	25 1/8	25 3/8	- 5/8	- 2.41
Computer Sciences	67 5/8	18	47 7/8	43 1/2	43 7/8	- 1/2	- 1.13
Digital Equipment Corp.	156	29 3/8	118 7/8	108 1/2	111	- 2	- 1.77
CC Computer Corp.	41	23 1/4	31 5/8	30 1/8	30 1/4	- 3/8	- 1.22
Leasco	146 1/4	33 5/8	116	107	109	- 2 1/4	- 2.02
Levin-Townsend Computer Corp.	77	10 7/8	55 1/4	51 1/8	51 7/8	+ 1/8	+ 0.24
Milgo Electronics	23 1/8	5 1/8	18 3/4	16 5/8	18 1/8	+ 1 5/8	+ 9.85
Mohawk Data Sciences	198 1/2	108	122 1/2	115	119 3/4	+ 2 3/4	+ 2.35
Planning Research	51	27 5/8	36 1/2	33 1/4	33 1/4	- 5/8	- 1.86
Potter Instrument	40 1/2	12 3/8	28 3/8	26 1/4	26 1/4	- 3/4	- 2.78
Randolph Computer Corp.	55 3/4	32 1/4	43 1/2	40 3/4	40 3/4	- 1/2	- 1.21
AMEX COMPUTER STOCK AVERAGE						+ 0.08	+ 0.70

OVER-THE-COUNTER	1967 High Bid	Low Bid	Friday Bid	Asked	Last Friday Bid	Week Net Change Bid	Week % Change Bid
Applied Data Research	30	3 1/8	25	27	24	+ 1	+ 4.17
Bolt, Beranek & Newman, Inc.	30	8 1/4	19 3/4	20 1/4	19 3/4	. . . .	. . . .
Computer Usage	72	20 1/4	43	44 1/2	42	+ 1	+ 2.38
Cyber-Tronics	19	4 3/4	14 1/4	14 3/4	13 3/4	+ 1/2	+ 3.64
Data Products	23 3/8	2 1/2	16 3/4	17 1/4	16	+ 3/4	+ 4.69
Digitronics	27 1/2	6	20	21	18 3/4	+ 1 1/4	+ 6.67
DPA, Inc.	17 3/8	4 1/4	14 1/2	15	13 3/4	+ 3/4	+ 5.88
Electronic Memories	57 1/2	12 3/4	43 1/2	44 1/2	40 1/2	+ 2	+ 4.94
Fabri-Tek	15 3/4	6	11 1/8	11 5/8	10	+ 1 1/8	+ 1.13
Informatics	59 1/2	7 1/2	41	42 1/2	40 1/2	+ 1/2	+ 1.23
LMC Data, Inc.	16	7 3/8	11 1/4	12	11 1/4	. . . .	. . . .
Management Assistance	24 3/8	10 1/8	12	12 1/4	11 3/4	+ 1 1/4	+ 2.13
Memorex	67 1/4	59	63 1/2	64 1/2	63	+ 1/2	+ 0.79
Optical Scanning Corp.	102	25 3/4	77	80	84	- 7	- 8.33
Recognition Equipment Corp.	45 1/2	38 1/2	45 1/2	46 1/2	40	+ 5 1/2	+13.75
Systems Engineering Labs	63 1/4	8 7/8	48	50	49	- 1	- 2.04
University Computing Co.	95	65	65	67	66	- 1	- 1.52

HOLLINGSHEAD

"Just think, before long we'll be replaced by automation."

Computer Question

Taking The Life Out Of Sports?

By a Staff Reporter

It has often been said that television has made us a generation of spectators so far as sports are concerned – but at least this has left us watching players on great teams at work. With the impact of computer simulations of sporting events, however, even this vicarious connection with the real world of blood and sweat may soon be denied us. At least, that is the potential message behind two recent successes in the area.

Across The Centuries

Here in the United States, Murray Woroner Productions have simulated performances by all the heavyweight champions of the world. The fact that these champions did not even live in the same century did not stop them from being matched by

the Systems Programming Service mathematical model. At the end of this stimulating simulation Rocky Marciano was crowned all-time champion after knocking out Jack Dempsey in 13 rounds. Radio audiences thrilled to the news.

Banned Sports

Meanwhile computers on the other side of the Atlantic were concentrating on a real-time crisis. All horseracing had been banned in England due to an epidemic of foot-and-mouth disease. To keep the sport alive, a Beaverbrook paper, backed by the National Hunt Committee and the University of London, successfully put racing commentators and bookies on a "Computer Steeplechase."

I wonder what all this means for sports . . . or for computers?

Values For Translators Quoted

NEW YORK, N.Y. – Estimates of the value of language conversion programs have been given in a report issued by Software Sciences Corp. Language conversion programs are estimated to reduce manual effort in converting second generation programs written in Cobol by 50%, in Fortran by 65%, and in RPG by 90%. Users are well advised to take advantage of such special conversion programs, in order to ease the transition to third generation systems, the report said.

Users are losing millions of dollars in computer productivity daily, because they are finding it hard to get many of the immediate advantages they expected, according to Gordon Frank, Software president.

Information processing costs have already reached 10% of the total budget in some major corporations. Cost factors are sometimes not as rigidly applied to computer activity as they should be, though cost factors are widely used in most companies, the report said. Information processing costs are expected to continue rising.

By 1970, growing software and programming costs are expected to take up 60% of the overall computer budget. Users are expected to devote 70% of their software funds to systems design and analysis by 1975.

Software and programming expenditures will be largely devoted to higher level programming languages that can interact more efficiently with present systems. According to the report, this would ease the transition to the next generation of equipment. Growing emphasis on systems design and analysis is expected because computers are more and more intertwined with every function of organizations.

The Software Sciences report on EDP management provides "a comprehensive guide" for evaluation of support functions of data processing installations, Mr. Frank said.

GE 265 Is Basis For First French Time-Sharing Net

PARIS, FRANCE – France's first commercial time sharing service has been launched by M. Olivier Guichard, Minister of Industry. Anyone with a telephone in Metropolitan Paris is able to gain access to a high speed computer – at a fraction of the cost of maintaining his own data processing system – under Bull-General Electric's new time sharing system.

Standard telephone lines link the user to the central computer, a GE 265 system in Paris. User cost of the system starts at 2000 francs (about $400).

More than 15 customers were signed up before the system was inaugurated, BGE officials said. Most of the customers are in the Paris area, but one is in Grenoble, site of the 1968 Winter Olympics. Another is in Lille, a university town.

A commercial time sharing computer center was started in England last August. In the U.S. and Canada, more than 25 GE systems provide computer service for an estimated 50,000 users.

SDS Simulator

REDONDO BEACH, CALIF. – Two new software simulators for the SDS Sigma 5 and 7 computers have been announced by United Computing Corp. Unite II simulates the SDS 9300 series equipment. Unite III simulates the CDC lower 3000 series computers.

Another simulator for the SDS 900 series, Unite I, was released in January.

The Unite programs execute direct object code for the computers being simulated. This allows codes written for these computers to be run directly on Sigma without modification. The packages sell for $8000, including the simulator, a week of on-site support, user's manual, and a lifetime warranty on the program's code structure.

New Literature

Treating Old Tapes Covered

A Systematic Guide to Magnetic Tape Rehabilitation. *8 pp. Free. Order from: Cybertronics, Inc., 132 Calvary St., Waltham, Mass. 02154.*

New and technically updated. Encompasses six areas relating to use and maintenance of magnetic tape, including causes for tape failure, rehabilitation concepts and cost concepts. Describes tape cleaning, testing, certification and repair, 7 to 9 channel conversion, and management reporting. Charts, graphs, and technical drawings.

Business Communications Systems Catalog. *8 pp. Free. Order from: Tally Corp., 1310 Mercer St., Seattle, Wash. 98109.*

Illustrated catalog describes Tally data communication systems used to move data over ordinary telephone lines.

FDP Disk-Memory System Input/Output Manual. *8 pp. Free. Order from: Display Division, Data Disc, 1275 California Ave., Palo Alto, Calif. 94304.*

Manual contains details on digital video disk memories available from Data Disc. Describes single disk memories with up to 72 completely independent tracks providing low cost, high density data buffer storage, used to store digital video data to refresh CRT displays.

Analog-to-Digital and Digital-to-Analog Converters. *28 pp. Free. Order from: Kearfott Products Division, General Precision Systems, 1150 McBride Ave., Little Falls, N.J. 07424.*

Contains general and specific information about conversion equipment. Describes individual conversion circuit cards to complete conversion systems. Illustrated with photographs as well as curves, schematics, and diagrams.

Y-Series Digital-to-Analog Conversion Systems. *10 pp. Free. Order from: Adage, Inc., Marketing Services Dept., 1079 Commonwealth Ave., Boston, Mass. 02215.*

Describes Adage's Y Series conversion systems. System structure and operation discussed. Photographs, diagrams, and systems specifications included.

Calculation of the Properties of Vacancies and Interstitials. *Ed. Alan D. Franklin, National Bureau of Standards. Miscellaneous Publication 287, issued Nov. 17, 1967. 202 pp. $2.50. Order from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.*

Book represents proceedings of a conference sponsored by NBS Institute for Materials Research and the Advanced Research Projects Agency. Conference covered static-lattice energies and configurations, electronic states, and vibrational states. Primary concern was critical evaluation of these properties from a theoretical point of view. Approach to each topic consisted of contributed papers on current research, invited talks, and a panel discussion.

Fortran For IBM System/360, *S.C. Plumb, David E. Napper, Programmed Text. 274 pp. Advisor Guide, 16 pp. $1.25. Order from: Science Research Associates, Inc., 259 East Erie St., Chicago, Ill. 60611.*

A new programmed instruction course for beginners published in paperback format by Science Research Associates, an IBM subsidiary. Can be used to teach programming in Fortran to high school and college students, businessmen, scientists and engineers. Students move at their own pace. High school algebra is the only prerequisite. Accompanying 16-page Advisor Guide explains philosophy of programmed instruction, indexes topic and exercises, gives suggestions for guiding the student, and provides answers to examination questions.

How to Slash Your Paperwork and Data Processing Costs. *8 pp. Free. Order from: Communitype Corp. Dept. X-28, P.O. Box 3490, Grand Central Station, New York, N.Y. 10017.*

Booklet gives technical details and describes applications of Communitype's new multi-purpose Data Communication System. The system is claimed to save time and money, ease personnel problems, and introduce efficiency and flexibility to paperwork flow.